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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,532

08/18/2006

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12/13/2007

EXAMINER

WACHSMAN, HAL D

ART UNIT

PAPER NUMBER

2857

MAIL DATE

DELIVERY MODE

12/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,532	Applicant(s) WEE, ARNSTEIN	
	Examiner Hal D. Wachsman	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9-21-06</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The drawings are objected to for the following reasons. All of the drawings have the WO 2005/057142 and PCT/NO2004/000379 application numbers at the top of each drawing sheet and not the U.S. application serial no. Also, Figures 1, 6 and 7 are improper under 37 C.F.R. 1.84(h)(2) because of each of these drawings contain multiple views that have not been labeled separately. In addition, Figure 1 is improper under 37 C.F.R. 1.84(m) because the figure contains solid black shading. Appropriate correction is required.
2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). The only Abstract in the image file wrapper is the one on the first page of the WO 2005/057142 A1 publication. An abstract on a separate sheet is required.
3. The listing of references in the specification (see pages 2-5, 9 and 20 (see the ISO references) of the specification) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.
4. Page 1 of the specification refers to claims 1 and 12 and page 6 refers to claims 12, 2-11 and 13-21 of the application. However, as during the course of prosecution of an application, claims may be cancelled and claims may be renumbered if an application goes to issue, claim numbers should not be referred to in the specification. Appropriate correction is required.

5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

6. Pages 6-7 of the specification contain brief descriptions of the drawings.

However, this section has not been labeled as for example "Brief Description of the Drawings". In addition, the brief descriptions for Figures 13-17 refer to different numbered embodiments of a flow meter however the brief descriptions do not briefly describe the embodiment of the flow meter. Appropriate correction is required.

7. Page 8, line 33, of the specification, cites "...varied form 10MHz" however was this intended to be "...varied *from* 10MHz" ? In addition, the last line of page 12 to the top of page 13 of the specification states "...0.5 throat 10 diameters.." in which there is ambiguity with respect to what is meant by this. Page 13 of the specification refers to Equation 1. However, this is not the first equation in the specification as there wa an equation on page 3 of the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, step b, cites "the degree of annular flow is determined *based on* the measurements of step a" which does not particularly point out how the measurements of step a are used to determine the degree of annular flow. This same type of problem also occurs in claims 5 and 6 as well as in claim 12, part b. Claim 1, step c, cites "the permittivity of the flow mixture is calculated *based on* the results from steps a and b including correction for the degree of annular flow" which does not particularly point out how the results from steps a and b are being used to calculate the permittivity of the flow mixture and does not particularly point out how the degree of annular flow is being corrected. This same type of problem also occurs in claim 12, part

c. In addition, in claim 1, step c, "the flow mixture" lacks clear antecedent basis. Claim 1, step d, cites "...compensated for the degree of annular flow" which does not particularly point out how exactly the mixture density is being compensated. Claim 1, step e, cites "the temperature and pressure are obtained" however the temperature and pressure of what exactly is being referred to here ? This same type of problem also occurs in claim 12, part f. Claim 1, step f, cites "the velocity of liquid and gas are determined" however is this referring to the velocity of the gas and at least one liquid in the pipe ? This same type of problem also occurs in claim 12, part e. Claim 1, step g, cites "*based on* the knowledge of densities and permittivities of the components of the fluid mixture, and the result from the above steps a-f, the volume and mass flow rates of the gas and liquid or liquids of the fluid mixture are calculated" which does not particularly point out exactly how the densities, permittivities and the results of steps a-f are being used to calculate the volume and mass flow rates of the gas and liquid or liquids of the fluid mixture. This same type of problem also occurs in claim 12, part g. Claim 2, lines 1-2, cite "the multiphase flow" which lacks clear antecedent basis. Claim 4, line 2, cites "the electromagnetic measurements" however is this referring to the electromagnetic loss measurements ? Claim 7, lines 2-3, cite "the received antennas" however the antecedent basis is "two receiving antennas". Claim 11, lines 1-2, cite "the pressure recovery at the outlet of the venturi" which lacks antecedent basis. This same type of problem also occurs in claim 21. Claim 12, part b, cites "...a suitable data model" which is vague with respect to what type of data model is suitable for the determination of the degree of annular flow. Claim 12, part c, cites "a computer and a mathematical

program for calculating the permittivity of the flow mixture..." however as the program is not being stored such as on a computer readable storage medium there is ambiguity with respect to how the functionality of such a program is being realized as well as vagueness with respect to what type(s) of programs are being referred to here specifically for performing the described calculation. Claim 12, part d, cites "...compensating it for the degree of annular flow" however the use of the pronoun "it" here adds vagueness with respect to what exactly is being compensating for the degree of annular flow. Claim 14, line 2, cites "at the time" however "the time" for what exactly is being referred to here ? Claim 15, line 2, cites "or loss" however is this referring to electromagnetic loss ?

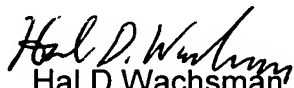
10. The following references are cited as being art of general interest: Gysling et al. (6,601,458) and Gysling et al. (6,813,962) which disclose distributed sound speed measurements for multiphase flow measurement, Nyfors et al. (US 2004/0244501 A1) which disclose an annular flow regime, Taherian et al. (5,485,743) which disclose a microwave device and method for measuring multiphase flows, Thompson (5,929,342) which discloses three phase fluid flow in tubulars, Lynch et al. (6,335,959) which disclose determining oil well effluent characteristics for inhomogeneous flow conditions, Nyfors et al. (6,466,035) which disclose a microwave fluid sensor and Fincke (6,332,111) which discloses measuring multiphase flow using multiple pressure differentials.

11. No claims are allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D. Wachsman whose telephone number is 571-272-2225. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Hal D Wachsman
Primary Examiner
Art Unit 2857

HW
December 8, 2007